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CALIBRATION LABORATORIES

NVLAP LAB CODE 200406-0

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

6402 Skipjack Cir. Org. 43-50, Bldg. TSB P.O. Box 6429, NSB Bangor Silverdale, WA 98315-6429 Mr. Robert J. Ott

Phone: 360-396-8425 Fax: 360-396-6737 E-Mail: bob.ott@lmco.com

DIMENSIONAL

NVLAP Code: 20/D03

Gage Blocks - Steel and Chrome Carbide

Range in inches	Best Uncertainty (\pm) in μ inches ^{note 1}	Remarks
0.01 to 0.09375 (except 0.05)	3.7	Mechanical Comparison
0.05	4.4	Mechanical Comparison
0.1 to 0.95 (except 0.35 and 0.85)	3.0	Mechanical Comparison
0.35	3.2	Mechanical Comparison
0.85	3.3	Mechanical Comparison
1.0	3.3	Mechanical Comparison
2.0	3.2	Mechanical Comparison
3.0	3.5	Mechanical Comparison
4.0	4.4	Mechanical Comparison

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5.0	9.7	Mechanical Comparison
6.0	10.0	Mechanical Comparison
7.0	10.3	Mechanical Comparison
8:0	10.6	Mechanical Comparison
10.0	11.3	Mechanical Comparison
12.0	12.1	Mechanical Comparison
16.0	14.0	Mechanical Comparison
20.0	16.1	Mechanical Comparison
Gage Blocks - Ceramic and Tungs	sten Carbide	
Gage Blocks - Ceramic and Tungs 0.01 to 0.09375 (except 0.05)	sten Carbide 4.7	Mechanical Comparison
0.01 to 0.09375		Mechanical Comparison Mechanical Comparison
0.01 to 0.09375 (except 0.05)	4.7	•
0.01 to 0.09375 (except 0.05) 0.05 0.1 to 0.95	4.75.4	Mechanical Comparison
0.01 to 0.09375 (except 0.05) 0.05 0.1 to 0.95 (except 0.35 and 0.85)	4.75.44.0	Mechanical Comparison Mechanical Comparison
0.01 to 0.09375 (except 0.05) 0.05 0.1 to 0.95 (except 0.35 and 0.85) 0.35	4.75.44.04.2	Mechanical Comparison Mechanical Comparison Mechanical Comparison

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2.0

3.0

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Mechanical Comparison

Mechanical Comparison

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

5.2

6.5

4.0	8.4	Mechanical Comparison
NVLAP Code: 20/D11 Spherical Diameter, Plug	Ring Gages	
Range in inches	Best Uncertainty (\pm) in μ inches ^{note 1}	Remarks
Ring Gages		
>0 to 8.0	20	Comparison to Gage Blocks
Plug Gages		
>0 to 3.0	40	Comparison to Gage Blocks

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

NVLAP Code: 20/D14

Threaded Plug and Ring Gages

Threaded Plug Gages, 60°

	Range	Best Uncertainty $(\pm)^{note\ 1}$	Remarks
Pitch Diameter	>0 to 6.0 in	90 μin	Three Wire Method
Major Diameter	>0 to 6.0 in	40 μ in	Universal Measuring Machine
Half Angle	60°	3 arc minutes	Optical Comparator Inspection
Pitch	4 to 80 TPI	100 μ in	Universal Measuring Machine
Threaded Ring Gages	s, 60°		
Minor Diameter	>0 to 6.0 in	40 μ in	

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E02

AC Current

Range	Best Uncertainty (\pm) in ppm ^{note 1}	Frequency Range
$10~\mu\text{A}$ to $220~\mu\text{A}$	176 to 9100	10 Hz to 10 kHz
220 μ A to 2.2 mA	148 to 4300	10 Hz to 10 kHz
2.2 mA to 22 mA	148 to 3500	10 Hz to 10 kHz
22 mA to 220 mA	144 to 1580	10 Hz to 10 kHz
220 mA to 2.2 A	318 to 7800	20 Hz to 10 kHz
2.2 A to 11 A(w/5725A)	417 to 3375	40 Hz to 10 kHz

NVLAP Code: 20/E05

DC Current

Range	Best Uncertainty (\pm) in ppm ^{note 1}	Remarks
10 μA to 220 μA	74 to 360	
$220~\mu A$ to $2.2~mA$	39 to 71	
2.2 mA to 22 mA	37 to 58	
22 mA to 220 mA	59 to 87	

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220 mA to 2.2 A

125 to 183

2.2 A to 11 A(w/5725A)

388 to 558

NVLAP Code: 20/E05

DC Resistance

Range in ohms	Best Uncertainty (\pm) in ppm $^{note\ 1}$	Remarks
1.0	1	Using Guildline Bridge
10.0	1	Using Guildline Bridge
100.0	1	Using Guildline Bridge
1000.0	1	Using Guildline Bridge
10000.0	1	Using Guildline Bridge
100000.0	2	Using Guildline Bridge

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NVLAP Code: 20/E06

DC Voltage

Range (\pm)	Best Uncertainty (\pm) in ppm ^{note 1}	Remarks
0.1 V	8.1	Compared to 10 V Reference Cell
1.0 V	1.3	Compared to 10 V Reference Cell
10.0 V	1.0	Compared to 10 V Reference Cell
100.0 V	1.0	Compared to 10 V Reference Cell
1000.0 V	1.1	Compared to 10 V Reference Cell

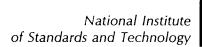
NVLAP Code: 20/E09 LF AC Voltage

ū		
Range	Best Uncertainty (\pm) in ppm ^{note 1}	Frequency Range
1 mV to 220 mV	126 to 28000	10 Hz to 1 Mhz
220 mV to 2.2 V	52 to 4409	10 Hz to 1 Mhz
2.2 V to 22 V	50 to 3200	10 Hz to 1 Mhz
22 V to 220 V	63 to 13348	10 Hz to 1 Mhz
220 V to 250 V	400 to 410	15 Hz to 50 Hz
220 V to 1100 V	79 to 100	50 Hz to 1 kHz
220 V to 1100 V (w/5725A)	85 to 1360	40 Hz to 30 kHz

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TIME AND FREQUENCY

NVLAP Code: 20/F01 Frequency Dissemination

Range

Best Uncertainty $(\pm)^{note\ 1}$

Remarks

0.1 MHz

2 parts in 10¹² Hz

1 MHz

2 parts in 10¹² Hz

5 MHz

2 parts in 10¹² Hz

10 MHz

2 parts in 10¹² Hz

NVLAP Code: 20/F02 Time Dissemination

Range

Best Uncertainty $(\pm)^{note\ 1}$

Remarks

1 pps

 $10 \mu s$

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Remarks

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NVLAP Code: 20/F03 Oscillator Characterization

Range	Best Uncertainty $(\pm)^{note\ 1}$
0.1 MHz	2 parts in 10 ¹² Hz
1 MHz	2 parts in 10 ¹² Hz
5 MHz	2 parts in 10 ¹² Hz
10 MHz	2 parts in 10 ¹² Hz

1. Represents an expanded uncertainty using a coverage factor, k=2.

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